In re: Kim et al.

Serial No. 10/722,315 Filed: November 24, 2003

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Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the present application.

In the Claims:

- 1-14. (Canceled).
- 15. (Previously presented) A method of forming a trench isolation film on an integrated circuit substrate, the method comprising:

forming a trench on the substrate using a pattern;

forming a liner on a surface of the substrate, a sidewall of the trench and/or a bottom face of the trench;

forming a spin on glass (SOG) film on the substrate including the formed trench and the liner to fill the trench;

soft baking the SOG film at a temperature of less than about 400°C;

etching the soft baked SOG film;

forming an insulation film on the etched SOG film;

removing a portion of the formed insulation film to expose the pattern;

removing the exposed pattern; and

planarizing a remaining portion of the insulation film.

- 16. (Canceled).
- 17. (Original) The method of Claim 15, wherein etching the soft baked SOG film is followed by thermally treating the etched SOG film at a temperature from about 400°C to about 1200°C to convert the etched SOG film to silicon oxide.
 - 18. (Canceled).

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- 19. (Original) The method of Claim 15, wherein etching the SOG film comprises wet etching the SOG film using a hydrogen fluoride (HF) solution.
- 20. (Original) The method of Claim 15, wherein the insulation film includes oxide and wherein forming the insulation film comprises forming the insulation film using a chemical vapor deposition (CVD) process.
- 21. (Original) The method of Claim 15, wherein planarizing a remaining portion of the insulation film comprises planarizing the remaining portion of the insulation film using a chemical mechanical polishing (CMP) process.

22.-30. (Canceled).

31. (Previously presented) A method for forming a trench isolation film comprising: forming a trench on a substrate by etching the substrate using a pad oxide film pattern and a hard mask pattern as etching masks;

continuously forming a liner including an insulation material on the surface of the substrate, on a sidewall of the trench and on a bottom face of the trench;

forming an SOG film on a substrate to sufficiently fill up the trench by coating an SOG solution on the substrate including the trench;

soft baking the SOG film;

etching a whole surface of the SOG film;

forming an insulation film on a resultant structure formed on the substrate;

partially removing the insulation film to expose the hard mask pattern;

removing the hard mask pattern and the pad oxide film pattern; and

removing the insulation film remaining on a surface of substrate to expose the surface of the substrate.

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- 33. (Original) The method of Claim 31, wherein the SOG film is etched by a wet etching process using an HF solution.
- 34. (Original) The method of Claim 31, wherein the insulation film includes oxide and the insulation film is formed using a CVD process.
- 35. (Original) The method of Claim 31, further comprising thermally treating the substrate including the resultant structure at a temperature of about 400 to about 1,200°C.
- 36. (Original) The method of Claim 31, wherein removing the insulation film is performed using a CMP process.
 - 37. (Canceled).
- 38. (New) The method of Claim 15, wherein soft baking the SOG film is performed at a temperature in a range from about 100°C to about 300°C.
- 39. (New) The method of Claim 31, wherein soft baking the SOG film is performed at a temperature in a range from about 100°C to about 300°C.